

## PATENT ABSTRACTS OF JAPAN

(11)Publication number : 07-201496  
 (43)Date of publication of application : 04.08.1995

(51)Int.CI.

H05H 1/46  
 C23C 14/40  
 C23C 16/50  
 C23F 4/00  
 H01L 21/203  
 H01L 21/205  
 H01L 21/3065  
 H01L 21/31

(21)Application number : 05-351189

(71)Applicant : MATSUSHITA ELECTRIC IND CO LTD

(22)Date of filing : 29.12.1993

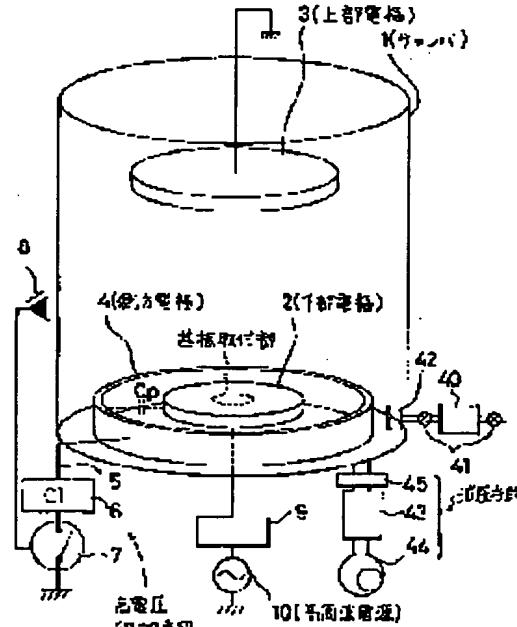
(72)Inventor : KUBOTA MASABUMI  
 TAMAOKI NORIHIKO  
 NOMURA NOBORU  
 OKUNI MITSUHIRO

## (54) METHOD AND DEVICE FOR GENERATING PLASMA

## (57)Abstract:

PURPOSE: To provide a plasma generating device and a plasma generating method for generating plasma of high density further with good uniformity under a high vacuum.

CONSTITUTION: A lower part electrode 2 which is a voltage applying electrode connected to a high frequency power supply 10, upper part electrode 3 which is an earth electrode and a sideward electrode 4 capacitively connected between itself and the lower part electrode 2 are arranged in a chamber 1. After a pressure is reduced on a vacuum condition in the chamber 1 by a pressure reducing means, when high frequency power is supplied to the lower part electrode 2 from the high frequency power supply 10, a series resonance phenomenon is generated, and high voltage, hard to be generated by ordinary power supply voltage, is applied to the lower part electrode 2. Thus, a discharge is easily generated even in a high vacuum, to generate plasma. Since a means free path is lengthened of an ion in the plasma in a high vacuum, a direction of the ion is arranged properly, to generate the plasma of high density further with good uniformity. In lieu of the sideward electrode, a resonance circuit containing a capacity element or the like may be provided.



## LEGAL STATUS

[Date of request for examination]

[Date of sending the examiner's decision of rejection]

[Kind of final disposal of application other than

the examiner's decision of rejection or  
application converted registration]  
[Date of final disposal for application]  
[Patent number]  
[Date of registration]  
[Number of appeal against examiner's decision  
of rejection]  
[Date of requesting appeal against examiner's  
decision of rejection]  
[Date of extinction of right]

Copyright (C) 1998,2003 Japan Patent Office